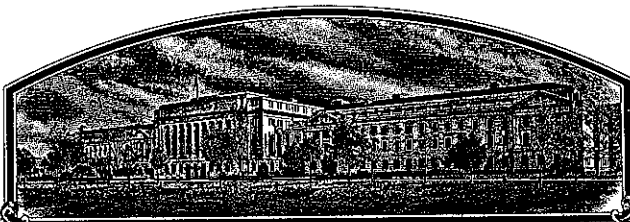


No.

9400088



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Busch Agricultural Resources, Inc.

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF *eighteen* YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. THE UNITED STATES SEED OF THIS VARIETY (1) SHALL BE SOLD BY VARIETY NAME ONLY AS CERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS SPECIFIED BY THE OWNER OF THE RIGHTS. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

BARLEY

'82912'



In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this 29th day of December in the year of our Lord one thousand nine hundred and ninety-five.

Attest:

Marsha A. Stanton

Commissioner

Plant Variety Protection Office
Agricultural Marketing Service

W. J. Hilman
Secretary of Agriculture

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions on reverse)

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S) (as it is to appear on the Certificate) Busch Agricultural Resources, Inc.		2. TEMPORARY DESIGNATION OR EXPERIMENTAL NO. 6B84-2912		3. VARIETY NAME B2912 AAA 1874 1995	
4. ADDRESS (street and no. or R.F.D. no., city, state, and ZIP) 3515 East County Road 52 Fort Collins, Co. 80524		5. PHONE (Include area code) (303) 221-5622		FOR OFFICIAL USE ONLY PVPO NUMBER 9400088	
6. GENUS AND SPECIES NAME Hordeum Vulgare L.		7. FAMILY NAME (Botanical)		F I L I N G Date Feb. 3, 1994 Time 4:05 <input type="checkbox"/> A.M. <input checked="" type="checkbox"/> P.M.	
8. CROP KIND NAME (Common Name) Spring Barley		9. DATE OF DETERMINATION 1984		F E E S Filing and Examination Fee: \$2150.00 & 175.00 Date 12/16/93 & 2/28/94	
10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION (Corporation, partnership, association, etc.) Corporation				R E C E I V E D Certificate Fee: \$275.00 Date Dec. 4, 1995	
11. IF INCORPORATED, GIVE STATE OF INCORPORATION Delaware		12. DATE OF INCORPORATION			
13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS Duane Teehee 3515 East County Road 52 Fort Collins, Co. 80524 Mike Bjorko Terry Moran per phone call 23 May 1995 AAA FAX (970) 482 5965 970 221-5622 1 Dec 1995 per phone conv.					

14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow INSTRUCTIONS on reverse)			
a. <input checked="" type="checkbox"/> Exhibit A, Origin and Breeding History of the Variety. b. <input checked="" type="checkbox"/> Exhibit B, Novelty Statement. c. <input checked="" type="checkbox"/> Exhibit C, Objective Description of Variety. d. <input checked="" type="checkbox"/> Exhibit D, Additional Description of Variety. e. <input checked="" type="checkbox"/> Exhibit E, Statement of the Basis of Applicant's Ownership. f. <input checked="" type="checkbox"/> Seed Sample (2,500 viable untreated seeds). Date Seed Sample mailed to Plant Variety Protection Office _____ g. <input checked="" type="checkbox"/> Filing and Examination Fee (\$2,150) made payable to "Treasurer of the United States."			
15. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? (See section 83(a) of the Plant Variety Protection Act.) <input checked="" type="checkbox"/> YES (If "YES," answer items 16 and 17 below) <input type="checkbox"/> NO (If "NO," skip to item 18 below)			
16. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		17. IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED? <input checked="" type="checkbox"/> FOUNDATION <input checked="" type="checkbox"/> REGISTERED <input checked="" type="checkbox"/> CERTIFIED	
18. DID THE APPLICANT(S) PREVIOUSLY FILE FOR PROTECTION OF THE VARIETY IN THE U.S. <input type="checkbox"/> YES (If "YES," through <input type="checkbox"/> Plant Variety Protection Act <input type="checkbox"/> Patent Act. Give date: _____) <input checked="" type="checkbox"/> NO			
19. HAS THE VARIETY BEEN RELEASED, USED, OFFERED FOR SALE, OR MARKETING IN THE U.S. OR OTHER COUNTRIES? <input type="checkbox"/> YES (If "YES," give names of countries and dates) <input checked="" type="checkbox"/> NO			

20. The applicant(s) declare(s) that a viable sample of basic seeds of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable.

The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in section 41, and is entitled to protection under the provisions of section 42 of the Plant Variety Protection Act.

Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF APPLICANT (Owner(s)) 	CAPACITY OR TITLE Director	DATE 14 Dec 1993
SIGNATURE OF APPLICANT (Owner(s)) 	CAPACITY OR TITLE	DATE

EXHIBIT A**Origin and Breeding History of 6B84-2912**

VARIETAL NAME: TO BE NAMED LATER

EXPERIMENTAL LINE NUMBER: 6B84-2912

} B2912 AAA 18APR 1995

PEDIGREE: ROBUST//MOREX/SIX-ROW COMPOSITE

AOSCA APPROVAL: MARCH, 1992, VARIETAL PUBLICATION NO. 147

DATE OF CROSS: Morex and the six-rowed composite were crossed in the spring of 1974. A selection from that cross was experimental line number 6B80-621, which was crossed with Robust in the fall of 1981.

HISTORY: The F1 seed was bulked and grown in 1982 in the spring greenhouse. The F2 seed was harvested, bulked and planted at a very low seeding rate in Crystal, North Dakota in 1982. A single F3 seed from a head selection was advanced in 1983 in the spring greenhouse. The F4 heads were planted as rows in 1983, in Climax, Minnesota. Bulk threshed F5 seed from a selected head row was planted as an increase plot in the 1983-84 winter nursery at Yuma, Arizona. Malting quality tests on the remnant F5 seed assisted in the selection of an F6 plot, which was assigned the experimental line number 6B84-2912 and entered in yield trials grown at Moorhead and Climax, Minnesota, Spring 1984.

6B84-2912 was recycled in the first year yield trials in 1985; advanced to the second year trials in 1986. In 1987, the line was promoted to the third year yield trials, entered in the Canadian yield trials, and brewed for the first time at Anheuser-Busch's pilot brewery. Since 1988, 6B84-2912 has been tested in Minnesota, North and South Dakota, Iowa, Michigan, Nebraska, Wisconsin, Colorado, Wyoming, Montana, Idaho, and the Canadian Provinces of Alberta, Manitoba, and Saskatchewan. It has performed well in Busch Agricultural's elite trials in the U.S. and Canada. 6B84-2912 was entered in the Mississippi Valley Barley Nursery (1988-1990), the Canadian Western Cooperative Six Row Barley tests as BT 926 (1988-1990), and various University trials. A name has not been selected for 6B84-2912 at this time.

6B84-2912 is uniform and stable. Seed purification was initiated in 1989 with 60 head rows being grown at Berthoud, Colorado. Additional head rows were grown in 1990, 10 rows with no discard, 100 head rows in 1992 with three discards. Future head rows will be grown as necessary to produce breeder seed.

EXHIBIT B**NOVELTY STATEMENT**

'B2912'

~~6B84-2912~~ is most similar to the spring barley variety 'ROBUST', however, it can be distinguished by the following morphological characteristics:

- 6B84-2912 has rough awns.
'Robust' has smooth awns.
- 6B84-2912 has numerous teeth on the lateral veins.
'Robust' has no teeth on the lateral veins.

of the
lemmas
of the lemmas,
AAA
per phone
conversation
7 Jun 1995

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK AND SEED DIVISION
BELTSVILLE, MARYLAND 20705EXHIBIT C
(Barley)OBJECTIVE DESCRIPTION OF VARIETY
BARLEY (HORDEUM VULGARE)

INSTRUCTIONS: See Reverse.

NAME OF APPLICANT(S)

FOR OFFICIAL USE ONLY

PVPO NUMBER

9400088

VARIETY NAME OR TEMPORARY
DESIGNATION

B2912-111A 18Apr/95

Busch Agricultural Resources, Inc.

ADDRESS (Street and No. or R.F.D. No., City, State, and ZIP Code)

3515 East County Road 52, Fort Collins, Co. 80524

Place the appropriate number that describes the varietal character of this variety in the boxes below.
Place a zero in first box (i.e. or) when number is either 99 or less or 9 or less.

1. GROWTH HABIT:

 1 - SPRING 2 - FACULTATIVE WINTER 3 - WINTER Early Growth: 1 - PROSTRATE 2 - SEMIPROSTRATE
3 - ERECT

2. MATURITY (50% Flowering):

 1 - EARLY (California Mariout) 2 - MIDSEASON (Betzes) 3 - LATE (Frontier) No. of days Earlier than } 1 - BETZES 2 - CALIFORNIA MARIOUT 3 - CONQUEST 4 - DICKSON
 No. of days Later than } 5 - PIROLINE 6 - PRIMUS 7 - UNITAN 8 - Morex

3. PLANT HEIGHT (From soil level to top of head):

 1 - SEMIDWARF 2 - SHORT (California Mariout) 3 - MEDIUM TALL (Betzes) 4 - TALL (Conquest) Cm. Shorter than } 1 - BETZES 2 - CALIFORNIA MARIOUT 3 - CONQUEST 4 - DICKSON
 Cm. Taller than } 5 - PIROLINE 6 - PRIMUS 7 - UNITAN 8 - Morex

4. STEM:

 Exertion (Flag to spike at maturity): 1 = 0 - 3 cm. 2 = 3 - 10 cm. Anthocyanin: 1 - ABSENT 2 - PRESENT
3 = 10 - 15 cm. NO. OF NODES (Originating from node above ground) Collar Shape: 1 - CLOSED 2 - V-SHAPED 3 - OPEN Shape of Neck: 1 - STRAIGHT 2 - SNAKY
4 - MODIFIED CLOSED OR OPEN 3 - OTHER (Specify) slightly snaky

5. LEAF:

 Basal leaf sheath (seedling): 1 - GLABROUS 2 - PUBESCENT Position of flag leaf (at boot stage): 1 - DROOPING
2 - UPRIGHT Waxiness: 1 - ABSENT (Glossy) 2 - SLIGHTLY WAXY MM. WIDTH (First leaf below flag leaf)
3 - WAXY CM. LENGTH (First leaf below flag leaf) Anthocyanin in leaf sheath: 1 - ABSENT 2 - PRESENT

6. HEAD:

 Type: 1 - TWO-ROWED 2 - SIX-ROWED Density: 1 - LAX 2 - ERECT (Not dense)
3 - ERECT (Dense) 4 - mid dense Shape: 1 - TAPERING 2 - STRAP 3 - CLAVATE Waxiness: 1 - ABSENT (Glossy) 2 - SLIGHTLY WAXY
4 - OTHER (Specify) 3 - WAXY Lateral Kernels Overlap: 1 - NONE 2 - AT TIP Rachis (Hair on edge): 1 - LACKING 2 - FEW 3 - COVERED
3 - 1/4 - 1/2 OF HEAD

7. GLUME:

 Length: 1 - 1/3 OF LEMMA 2 - 1/2 OF LEMMA Hairs: 1 - NONE 2 - SHORT 3 - LONG
3 - MORE THAN 1/2 OF LEMMA Hair covering: 1 - NONE 2 - RESTRICTED TO MIDDLE 3 - CONFINED TO BAND 4 - COMPLETELY COVERED Awns: 1 - LESS THAN EQUAL TO LENGTH OF GLUMES 2 - EQUAL TO LENGTH OF GLUMES
3 - MORE THAN EQUAL TO LENGTH OF GLUMES Awn Surface: 1 - SMOOTH 2 - SEMISMOOTH 3 - ROUGH

9400088

8. LEMMA:

- ☐ 5 Awn: 1 - AWNLESS 2 - AWNLETS ON CENTRAL ROWS AWNLESS ON LATERAL ROWS
 3 - SHORT ON CENTRAL ROWS, AWNLETS ON LATERAL ROWS 4 - SHORT (less than equal to length of spike)
 5 - LONG (longer than spike) 6 - HOODED

- ☐ 4 Awn Surface: 1 - AWNLESS 2 - SMOOTH 3 - SEMISMOOTH 4 - ROUGH

- ☐ 3 Teeth: 1 - ABSENT 2 - FEW 3 - NUMEROUS ☐ 1 Hair: 1 - ABSENT 2 - PRESENT

- ☐ 3 Shape of base: 1 - DEPRESSION 2 - SLIGHT CREASE 3 - TRANSVERSE CREASE ☐ 1 Rachilla Hairs: 1 - SHORT 2 - LONG

9. STIGMA:

- ☐ 2 Hairs: 1 - FEW 2 - MANY

10. SEED:

- ☐ 2 Type: 1 - NAKED 2 - COVERED ☐ 1 Hairs on Ventral Furrow: 1 - ABSENT 2 - PRESENT

- ☐ 3 Length: 1 - SHORT (8.0 mm.) 2 - SHORT TO MIDLONG (7.5 - 9.0 mm.) 3 - MIDLONG (8.5 - 9.5 mm.)
 4 - MIDLONG TO LONG (9.0 - 10.5 mm.) 5 - LONG (10.0 mm.)

- ☐ 2 Wrinkling of hull: 1 - NAKED 2 - SLIGHTLY WRINKLED 3 - SEMIWRINKLED 4 - WRINKLED

- ☐ 1 Aleurone Color: 1 - COLORLESS (White or Yellow) 2 - BLUE

- ☐ 0 0 PERCENT ABORTIVE

- ☐ 4 1 GMS. PER 1000 SEEDS

11. DISEASE: (0 = Not Tested, 1 = Susceptible, 2 = Resistant)

- ☐ SEPTORIA ☐ 1 NET BLOTCH ☐ SPOT BLOTCH ☐ POWDERY MILDEW
☐ LOOSE SMUT ☐ BACTERIAL BLIGHT ☐ COVERED SMUT ☐ FALSE LOOSE SMUT
☐ 1 STEM RUST QCC ☐ LEAF RUST ☐ SCAB ☐ 1 SCALD
☐ AY ☐ BSMV ☐ BYDV ☐ OTHER (Specify)

12. INSECT: (0 = Not tested, 1 = Susceptible, 2 = Resistant)

- ☐ 0 GREEN BUG ☐ 0 ENGLISH GRAIN APHID ☐ 0 CHINCH BUG ☐ 0 ARMYWORM
☐ 0 GRASS HOPPERS ☐ 0 CEREAL LEAF BEETLE ☐ 1 OTHER (Specify) Russian Wheat Aphid
 HESSIAN FLY RACES ☐ GP ☐ A ☐ B ☐ C
☐ D ☐ E ☐ F ☐ G

13. CHEMICAL (0 = Not Tested, 1 = Susceptible, 2 = Resistant)

- ☐ DDT ☐ OTHER (Specify)

14. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED:

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant tillering	Robust	Seed size	Robust
Leaf size	Robust	Coleoptile elongation	N/A
Leaf color	Robust	Seedling pigmentation	Robust
Leaf carriage	Morex		

REFERENCES: The following publications may be used as a reference aid for the standardization of character descriptions and terms used in this form:

1. Wiebe, G. A., and D. A. Reid, 1961, Classification of Barley Varieties Grown in the United States and Canada in 1958, Technical Bulletin No. 1224, U.S. Dept. of Agriculture.
2. Reid, D. A., and G. A. Wiebe, 1968, Barley: Origin, Botany, Culture, Winter Hardiness, Genetics, Utilization, Pests, Agriculture Handbook No. 338, U.S. Dept. of Agriculture. pp. 61-84.
3. Malting Barley Improvement Association, Milwaukee, Wisconsin, 1971, Barley Variety Dictionary.

COLOR: Nickerson's or any recognized color fan may be used to determine color of the described variety.
 FORM LFGS-470-5 (8-80) (REVERSE)

EXHIBIT D**ADDITIONAL BOTANICAL DESCRIPTION OF '6B84-2912'**

'B2912' ADM 18 Apr 1995

6B84-2912 is a six-rowed spring barley developed by Busch Agricultural Resources, Inc. It is midseason in maturity and has excellent malting quality.

Juvenile growth habit is erect. The flag leaf is erect at the boot stage. The collar is mostly V-shaped, the range is between modified closed to open. The spike is strap or parallel, mid-dense, with a straight neck and semi-nodding head at maturity. Lemma teeth are numerous with no hairs. The lemma awn is longer than the spike. Lemma and glume awns are rough. Glumes are greater than one half the length of the lemma, while, the glume awn is longer than the glume. Glumes and the rachis edge are covered with short hairs. Rachilla hairs are short. Rachilla of the central floret, on the lower third of the spike, tend to be shorter and broader than rachilla of the lateral florets. The aleurone is white or colorless. The hull is adhering and slightly wrinkled.

6B84-2912 is adapted to the spring barley producing areas of Minnesota, North and South Dakota, the Canadian provinces of Manitoba, Saskatchewan, plus, the irrigated malt barley producing areas of Idaho, Montana, Wyoming, Colorado, and Alberta, Canada.

6

EXHIBIT E**STATEMENT OF THE BASIS OF APPLICANT'S OWNERSHIP**

Busch Agricultural Resources, Inc. is the applicant for protection in this case being:

- a. The incorporated business registered in Delaware for and within which regular employees have bred ~~6B84-2912~~ *62912' AAA*
- b. The proprietary owner and intending commercial seller *18 Apr 1995* of 6B84-2912.

EXHIBIT F

QUALITY AND AGRONOMIC DATA

'B2912' AAA 18 Apr 1995

~~BARI 6B84-2912~~ Agronomic Summaries 1984-1993.....page 1

BARI 6B84-2912 Quality Summaries 1984-1993.....page 2

AGRONOMIC SUMMARY

32912
AAA
18/01/1995

<u>Variety</u>	<u>Yield % Robust</u>					
	(30) <u>PRE 90</u>	(9) <u>90</u>	(4) <u>91</u>	(53) <u>92</u>	(25) <u>93</u>	(121) <u>AVG</u>
6B84-2912	102	96	96	106	107	105
Robust	100 *84*	100 *64*	100 *63*	100 *110*	100 *81)	100 *93*
Morex	93	98	95	89	90	90

<u>Variety</u>	(74) <u>HEAD</u> <u>1/1</u>	(80) <u>HT</u> <u>CM</u>	(69) <u>LDG</u> <u>1-9</u>	(62) <u>MAT</u> <u>1-3</u>	(29) <u>TEST</u> <u>WT</u>
6B84-2912	181	98	4.5	3.9	48.1
Morex	181	96	4.0	3.7	49.7
Robust	179	96	5.5	2.7	46.0

1984-1993 data, () = station years
 ** = bushels/acre

QUALITY SUMMARY

B2912'
ASA
18 Apr 1995

<u>Variety</u>	(19) <u>% Plump</u>	(21) <u>Malt Prot</u>	(20) <u>F. Grd</u>	(19) <u>C. Grd</u>	(18) <u>F-C Dif</u>	(20) <u>S/T</u>
6B84-2912	70.2	13.1	78.4	76.0	2.14	45.7
Morex	64.8	13.4	77.5	75.5	2.19	43.0
Robust	69.8	13.7	77.9	74.4	3.41	39.1

<u>Variety</u>	(20) <u>Sol Prot</u>	(21) <u>DP</u>	(21) <u>AA</u>	<u>WORT</u>		
				(14) <u>VIS</u>	(4) <u>CLR</u>	(15) <u>TUR</u>
6B84-2912	6.0	184	58.9	1.49	2.8	6
Morex	5.8	178	53.3	1.46	2.7	7
Robust	5.3	173	37.5	1.45	2.8	6

1987-1992 data, () = station years